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TOPONYMIC DATA FILES: COMPATIBILITY AND STRUCTURE OF SYSTEMS

Possible procedures for development of an automated names processing system

Paper submitted by the United States of America**

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1. Technical implementation of an automated names system may be accomplished in accordance with established and tested procedures. Basic to any automated database is selection of hardware and software, especially the Data Base Management System (DBMS). Paramount to developing an automated names system is identification and design of the required and desirable data elements as well as the structure of the data items within these data elements. The nature and extent of this task is directly related to the philosophical approach to populating the database, i.e. completeness with regard to all toponymic types or cartographic application only. A variety of other considerations are requisite, especially the scope of design and status of data compilation. Also, what is the type of system requirement? Is the system to be operated independently in a microcomputer environment or on a mainframe? Will it be networked, etc.?

2. It is not possible to completely determine requirements and potential implementation until some preliminary examination and investigation of existing capabilities are made. Some broad topics of consideration will be application, hardware, software (including DBMS), data collection, compilation and encoding, existing and modified field techniques, and office procedure, among others.

3. While an automated names database is an excellent vehicle for names analysis and assisting in names standardization, it is strongly recommended and in accordance with United Nations resolutions that a national names authority be established to adjudicate problems and serve as the single official source for names. Similarly, such a body would establish the officiality of the automated toponymic database.

4. The development of an automated toponymic database may proceed as follows.

I. Determine the functions the database is to perform.

A. What problems should it solve?

1. Co-locate geographic names information from disparate sources

2. Eliminate space requirements for storage of hard copy paper records

B. What processes should it make easier or more efficient?

1. Gazetteer production

2. Cartographic applications

3. Responses to requests for toponymic information

II. Based on the function of the database, determine the database content requirements.

A. What is the scope of the database content?

1. Will data be collected for the entire country, or for some civil, cultural, geographical or political subdivision of the country?

2. How extensive (or complete) should the data collection effort be?

(a) Identify and collect from all known applicable sources

(b) Prioritize applicable sources for limited data collection

B. What elements (fields) of information should be readily accessible and easily manipulated from within the database?

1. Toponymic data

(a) Name origin

(b) Etymology

(c) Name components (specific, generic)

(d) Other names (variant names)

2. Feature location data

(a) Point references (ex. geographic coordinates)

(i) Precision

(ii) Accuracy

(iii) Density

(b) Minor/major civil division references

(c) Map references

3. Historical and descriptive information about the feature

III. Determine the Database Management System (DBMS) most suited to requirements of the names processing system.

A. Flexibility of data definitions (field length and types)

B. Power of query language and report generator

C. Speed of query responses

D. Ease of maintenance (file/record building, back-up, etc.)

IV. Determine the methodology to be used for data collection.

A. Identify a base source (ex. map series) to which all information collected can be related

B. Determine how information should be extracted from other sources and transferred onto the base source

1. In what order should sources be researched?

2. How should attribute information be coded?

V. Establish data entry and validation procedures.

VI. Institute maintenance programme to ensure currentness, completeness, and continued viability of the database.